



1101 Connecticut Ave. N.W., Suite 910, Washington, D.C. 20036

April 10, 2003

Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
12th Street Lobby, TW-A325
Washington, DC 20554

Re: ***Ex Parte* Presentation**
WT Docket No. 01-309

Dear Ms. Dortch:

Pursuant to Section 1.1206 of the Commission's rules, this letter is to inform you that on April 7, 2003, Bill Plummer, David Dzumba, Chris Wallace and the undersigned of Nokia Inc., met with staff from the Wireless Telecommunications Bureau ("WTB"), the Consumer and Governmental Affairs Bureau ("CGB"), and the Office of Engineering and Technology ("OET"). WTB staff in attendance were: Joel Taubenblatt, Legal Advisor to the Bureau Chief; Jennifer Tomchin, Legal Advisor to the Bureau Chief; Mindy Littell, Attorney Advisor, Policy Division; Greg Guice, Attorney Advisor, Policy Division; Joseph Levin, Economist, Policy Division; and Patrick Forster, Engineer, Policy Division. CGB staff in attendance were: Gene Fullano, Legal Advisor, Office of the Bureau Chief; and Janet Sievert, Legal Advisor, Disability Rights Office. OET staff in attendance were: Julius Knapp, Deputy Chief; and Rashmi Doshi, Chief, Laboratory Division.

At the meeting, the parties discussed the ANSI C63.19 standard and the hearing aid compatibility ("HAC") exemption for digital wireless phones. Nokia's views on these issues are reflected in the attached document that was provided to FCC staff during the meeting.

If you should have any questions or need further information, please do not hesitate to contact me at (202) 887-0145.

Sincerely,

/s/ Leo R. Fitzsimon
Leo R. Fitzsimon
Director
Government and Industry Affairs
Nokia Inc.

Attachment

Cc:	Joel Taubenblatt	Greg Guice	Gene Fullano	Rashmi Doshi
	Jennifer Tomchin	Joseph Levin	Janet Sievert	
	Mindy Littell	Patrick Forester	Julius Knapp	

Digital Wireless Devices & Hearing Aids

Nokia

David Dzumba
Leo Fitzsimon
Bill Plummer
Chris Wallace

April 7, 2003

Agenda

- Commitment to accessibility
- Initiatives at Nokia
- Current projects
- Nokia's testing experience with ANSI C63.19
- Product summaries
- Concerns with ANSI C63.19 standard
- Nokia devices & T-coil capability
- Hearing Aid Compatibility (Part 68)
- Conclusions

Commitment to accessibility

- Nokia is the leading manufacturer of wireless communications products in both the U.S. and the world.
- Nokia is also proud to be at the forefront of providing accessibility solutions for all people, including individuals with disabilities.
 - Nokia has a global team of seven full-time employees dedicated to disability access initiatives.

“We have the skills, talent, and resources to design new solutions for accessibility while developing this market, along with the satisfaction that we, as a group, have dedicated ourselves to improving the lives of individuals with disabilities.”

~ Olli Kallasvuo, then-president of Nokia (Americas), speaking to all Nokia Americas employees in 1998

Initiatives

- Three years ago: One 2 One package, with Nokia 3330 and Nokia 6210, RNID, and T-Mobile, for deaf users
- One year ago: RNID, British Telecom develop Nokia 9210 Textphone. Six months later, connections made for emergency services, for relay assistance, textphone-to-textphone, and landline to textphone
- This year: Nokia 9210i Communicator, Vodafone's "speaking phone," with audible cues for blind users
 - Audible indicators in devices to determine battery and signal strength

*More than 50,000
Loopsets have been
purchased in the past
three years*



Initiatives

Successes during the past 10 years include:

- Nine years ago: User studies and focus groups including people with disabilities to determine desired features
- Seven years ago: Study of Nokia 9000i Communicator with deaf consumers
- Five years ago: User manuals in alternate formats available in U.S.
 - LPS-1 debuts in Europe
- Four years ago: Worldwide release of Mobile Inductive Loopset
 - ClassLink project with regional middle school for deaf education in Texas



The LPS-1 was invented by Nokia Design Engineer Mikko Haho. The Loopset launched in Europe in April 1998.

Current projects

Our history of designing accessibility in mainstream devices continues, with products and features soon available in selected phones. Some of these include:

- Digital wireless tailored to users with mild- to moderate-hearing loss
- Digital wireless for deaf/blind users
- Accessory for tetraplegic and others with limited mobility
- Audible feedback
- Mobile terminated TTY
- Audio/voice interaction with user interface eliminating need to see or grasp phone
- Headsets for wheelchair users
- Connectivity to assistive devices, including personal computers

ANSI C63.19 Testing

- Purpose
 - Test Nokia devices pursuant to ANSI C63.19 and HAC performance
 - Review and analyze test experience, results
- Test outline
 - Modes tested – AMPS, 800, 850, 1900
 - RF Emissions – E-Field and H-Field
 - T-Coil signal – Amplitude, Signal/Noise, and Frequency Response
- Products selected for test
 - Random sampling of representative phone models across following air interface protocols: GSM, TDMA, and CDMA.

ANSI C63.19 Testing

- Nokia's testing with the ANSI C63.19 standard has so far demonstrated that we have a number of devices in various categories. This is not surprising given Nokia's segmented market approach – we build very different products for very different end user needs
- Different designs, form factors and frequency bands will naturally have different RF emission characteristics and thus result in various levels of interference
 - There is a minimum amount of data regarding the usability of the standard and its ability to achieve predictable, reliable and accurate results. Testing one side of the equation provides no assurance that the device/hearing aid combination will be usable in the real world
- Final test results, review and analysis of Nokia devices expected to be concluded in late spring

Recommendations re: ANSI C63.19

- Mandatory ratings contrary to the intention of C63
- C63 intended to provide choices
- Focus for all parties should be on validating standard to ensure real world usability
- Nokia supports a peer review workshop as suggested by ANSI Subcommittee 8
- Nokia supports development and use of ATIS technical incubator to validate standard

Hearing Aid Compatibility (Part 68)

- Nokia's approach to terminal market has been through segmentation by use or use category
 - Each category is contoured to meet specific needs of each user class, and each category is challenging the status quo of what a terminal is
 - While voice has historically been the dominant feature of terminals, industry trends are evolving rapidly and voice is becoming just one element, such as camera, video, MP3, audio recording, and games, of a wireless device
 - Non-wireless applications of voice: Computers (VOIP), PDAs, automobiles, for example
- Industry's acoustic strategy is moving away from magnetic audio transducers to piezo-electric transducers in some categories. Fewer moving parts (reduced FFR) , higher fidelity, low current consumption, greater integration with manufacturing processes

Hearing Aid Compatibility (Part 68)

- Requiring t-coil coupling in all products would amount to an industrial design mandate could well stifle innovation as well as unduly increase costs for all consumers
- Alternatively, FCC could contemplate requiring each digital wireless handset manufacturer to provide at least one HAC phone per air interface standard it builds to
 - Consumers would have choice of a wide variety of digital HAC devices while wireless and hearing aid manufacturers would remain free to innovate to meet the needs of all consumers
 - Any requirements should be established based on the unique characteristics of wireless devices, not landline standardized solutions
- Based on an expectation that advanced and more universal alternatives to T-coil technology will emerge, any HAC requirements should be subject to periodic review and sunset

Conclusions

- As the leading wireless manufacturer in the world, Nokia is committed to and has a proven record of providing accessibility solutions for individuals with disabilities
- One-size-fits-all mandates are particularly inappropriate as the inclusion of some solutions may lead to the exclusion of others
- FCC should encourage participation of all stakeholders in the ATIS technical incubator to evaluate and stabilize ANSI C63.19 standard